

Amendment No. 1

Amendment to Agreement to Provide Professional Engineering Services to Develop a Water Treatment Plant Residuals Master Plan and Design between the City of Durham and CDM Smith Inc. (formerly Camp Dresser & McKee) (Project No. 9408)

This contract amendment (“Amendment”) is dated and entered into as of the _____ day of _____, 20_____, between CDM Smith Inc. (formerly Camp Dresser & McKee) a corporation authorized to do business in the State of North Carolina, (hereinafter referred to as the “Engineer”) and City of Durham (hereinafter referred to as the “City”).

The City and the Engineer entered into a contract titled “Agreement to Perform Professional Engineering Services to Develop a WATER TREATMENT PLANT RESIDUALS MASTER PLAN AND DESIGN between the City of Durham and Camp Dresser & McKee” dated January 17, 2011 That contract is referred to as the “Original Contract.” The Original Contract provided for preliminary design services and potential additional services for a total potential contract amount of \$496,100.00. The Original Contract is hereby amended as follows:

1. The Engineer and the City accept and reaffirm the terms of the Original Agreement include the following exhibits, which were attached to the Original Agreement:
 - a. Exhibit A, “Engineer’s Services”;
 - b. Exhibit B, “Owner’s Responsibilities”;
 - c. Exhibit C, “Payments to Engineer for Services and Reimbursable Expenses”;
 - d. Exhibit D, “Article 14 Duties, Responsibilities, and Limitations of Authority of Resident Project Representative”;
 - e. Exhibit E, “Notice of Acceptability of Work”;
 - f. Exhibit F – [not applicable];
 - g. Exhibit G, “Article 16 -- Insurance”;
 - h. Exhibit H, “Article 17 – Dispute Resolution”;
 - i. Exhibit I – [not applicable]; and
 - j. Exhibit J – “Article 18 Special Provisions”

The Engineer and the City also accept and reaffirm that the terms of the Original Agreement were supplemented by “Exhibit A” titled “Water Treatment Plant Residuals Master Plan and Design City of Durham, North Carolina (Project No. 9265) Scope of Work”, (hereinafter, “Exhibit A- Scope of Work”). To the extent that a conflict may exist between the terms of Exhibits A through J listed above and Exhibit A – Scope of Work, the latter shall be controlling.

2. The Original Agreement is amended and supplemented by the incorporation of Exhibit A-1, titled “Design, Permitting and Bidding Services”, attached hereto.

IN WITNESS WHEREOF, the parties hereto have executed this AMENDMENT No. 1 to the AGREEMENT, the Effective Date of which is indicated on page 1.

OWNER – CITY OF DURHAM

ATTEST:

By: _____

Preaudit Certification:

ENGINEER:

CDM Smith Inc.

Secretary

By: _____
Vice President

Corporate Seal – Engineer

Date Signed: _____

State of North Carolina

ACKNOWLEDGMENT BY CORPORATION

County of Wake

I, a notary public in and for the aforesaid county and state, certify that _____ personally appeared before me this day and stated that he is Secretary of _____, a corporation, and that by authority duly given and as the act of the corporation, the foregoing Amendment Number 1 with the City of Durham was signed in its name by its Vice President whose name is _____, sealed with its corporate seal, and attested by himself as its said Secretary. This the _____ day of _____, 2014.

My commission expires: _____

Notary Public

EXHIBIT A-1

Design, Permitting and Bidding Services

Introduction

The Master Planning and Preliminary Engineering phases are complete. This scope authorization includes Phases 3(*Design and Permitting*) and 4(*Bidding and Award*). At their conclusion, the City intends to amend this Agreement to authorize the Consultant to perform Phases 5(*Contract Administration*) and 6(*Contract Inspection*).

PROJECT OBJECTIVES AND DESCRIPTION

This AMENDMENT includes the design, permitting, and bidding services for residuals handling improvements at the Williams Water Treatment Plant and Brown Water Treatment Plant (WTP). The design will be based upon the recommendations of the reports *Water Treatment Plant Residuals Master Plan* (CDM Smith, July 2013) and *Draft Water Treatment Plant Residuals Preliminary Engineering Report* (CDM Smith, November 2013) and will include the elements identified as follows:

- Brown WTP
 - Two Concrete Backwash Equalization Tanks
 - Equalization Pump Station and Brick/Block Building
 - Two Concrete Backwash Clarifiers
 - Two Concrete Settled Solids Equalization Tanks
 - Two Concrete Gravity Thickeners
 - Gravity Thickener Pump Station and Brick/Block Building
 - Two Concrete Thickened Solids Holding Tanks
 - Solids Receiving (Truck Unloading) Station
 - Dewatering Building with Three Belt Filter Presses
 - Covered Cake Storage Area
 - SCADA System Upgrades
 - Filtrate Lift Station and Forcemain
 - Drying Bed Demolition
 - Access Roadways
 - All Appurtenances required for a complete, operable and maintainable residual process

- Williams WTP
 - Two Concrete Equalization Tanks
 - Equalization Pump Station and Brick/Block Building
 - Two Concrete Backwash Clarifiers
 - Two Concrete Gravity Thickeners
 - Improvements to Existing Solids Holding Tanks
 - Truck Loading Pump Station and Brick/Block Building
 - Solids Building with Liquid Polymer Batch and Feed
 - Demolition at Dewatering Building, Settled Solids Buildings, and Maintenance Shed
 - Drying Bed Demolition
 - All appurtenances required for a complete operable and maintainable residual process

This scope assumes that the existing Williams WTP decant tanks can be used with minimal improvements. The scope also assumes all pump stations will be brick and block buildings. Finally, up to 9,500 feet of off-site pipeline associated with the filtrate pump station is included.

The ENGINEER will provide the following services under this Amendment:

- Task 100 – Design Implementation and Project Meetings
- Task 200 – Final Design
- Task 300 – Permit Applications
- Task 400 – Bidding and Award

This scope of services assumes that the infrastructure improvements will be bid as a single construction contract for both plants, and also assumes the City will handle the negotiation and legal aspects of any easement acquisition directly with property owners. If additional construction contracts, or easement acquisition assistance, are required then an additional amendment would be required to increase the scope of engineering services and to provide additional compensation.

The detailed scope of services included in this Amendment (Task 100 through Task 400) follows. Additional services may be provided by the ENGINEER upon separate written authorization from the OWNER for a mutually agreed upon scope and budget.

TASK 100 DESIGN IMPLEMENTATION AND PROJECT MEETINGS

101 Project Initiation and Workplan

A design kick-off meeting will be held with the OWNER to discuss the project schedule, administrative procedures, scope of work, and OWNER expectations. The kickoff meeting will include setting critical success factors and determining the action items required to satisfy these critical project requirements. A schedule will be developed for all engineering activities during the design phase, including permitting agency submittal review periods and City of Durham review periods.

102 Project Meetings and Site Visits

The ENGINEER shall meet with the OWNER as needed to keep the OWNER informed and gain feedback on all significant issues. Meeting minutes will be prepared and ENGINEER shall collect and discuss the OWNER's input and review comments. The ENGINEER will lead the meetings and provide meeting minutes to document the discussion and action items. The ENGINEER will coordinate and attend visits with OWNER to other treatment facilities to observe equipment and operations under consideration by the City.

103 Brown Lift Station Discharge Options Assessment

Planned improvements to the Brown WTP include a lift station and pipeline to convey filtrate from the dewatering facility to the sewer system. This task will expand on the Draft Evaluation of Brown WTP Sewer Pump Station Technical Memorandum prepared by CDM Smith Inc., dated January 2014. The ENGINEER will evaluate two (2) alternative discharge locations: the Eno River Pump Station and the Snow Hill Pump Station, including a sub-alternative of gravity flow to the snow Hill Pump Station. The evaluation will consider the following items:

- City's input on planning for future growth and collection system requirements
- Preliminary pipeline alignment, constructability, and maintenance access
- Pipe material and corrosion protection
- Pump hydraulics and equipment
- Easement and permit requirements
- Conceptual construction cost comparison

The ENGINEER will also evaluate the option of capturing and treating the filtrate from the dewatering facility and recycling the water for potable treatment and use. The evaluation will focus on a cost comparison versus the lift station and gravity discharge options, investigation of other agencies in North Carolina who are currently recycling

filtrate, and preliminary discussion of this option with the State's Public Water Supply section.

The ENGINEER will prepare a technical memorandum to summarize the findings and conclusions from the evaluation and will submit to the OWNER as a draft. The ENGINEER will meet with the OWNER to discuss the draft memorandum and receive comments. The ENGINEER will then submit a final version of the memo that will serve as the basis of design.

TASK 200 FINAL DESIGN

201 Design Drawings and Specifications

The ENGINEER will prepare documents including drawings and specifications showing the scope, extent and character of the work to be performed and furnished by the Contractor, and specifications which shall be prepared, where appropriate, in general conformance with the Construction Specifications Institute. The design effort is based on the development and production of one (1) set of Contract Documents.

In the progress of this task, it is anticipated that three submittals of the Contract Documents will be provided in accordance with the following steps

- 60-percent set of plans and specifications
- 90-percent set of plans and specifications
- Final bid-ready levels of document completion.

The November 2013 PER represents an approximately 20% design progress document. All improvements identified under this scope of work shall be constructed under one set of contract documents which will include the following elements:

- General Drawings and Specifications
- Civil Drawings and Specifications
- Process/Mechanical Drawings and Specifications
- Structural Drawings and Specifications
- Architectural Drawings and Specifications
- HVAC and Plumbing Drawings and Specifications
- Instrumentation Drawings and Specifications

- Electrical Drawings and Specifications
- Fire protection will be provided as required by code.

Five (5) sets of review documents (drawings and specifications) shall be provided to the OWNER for review and comment at each interim review milestone. The OWNER's operation and maintenance staff will review the 60-percent design submittal and prepare comments for the ENGINEER. The ENGINEER will meet with the City's O&M staff to review and discuss the O&M comments. At the 90-percent stage, the "front end" Contract Documents shall be submitted for the OWNER's review.

Three (3) sets of final design bidding documents shall be provided to the OWNER at the time of bidding advertisement. Additional sets for the bidders will be provided for cost at the bidders expense, or at the OWNER's expense provided through an amendment.

202 Construction Cost Estimate

The ENGINEER will prepare construction cost estimate updates (e.g., Engineer's Opinion of Probable Construction Cost) at the 60-percent and 90-percent design completion milestones.

203 Technical and Constructability Reviews

The ENGINEER will constructability reviews during the preparation of plans and specifications, which will include the following elements:

- Review of required construction sequencing activities to coordinate with the Brown WTP Expansion Project and maintain plant operations during construction
- 60-percent design technical review
- 60-percent design constructability review
- 90-percent design final coordination review for consistency between disciplines

Thereafter, the ENGINEER shall bring the documents to final bid-ready completion.

204 Surveying

Topographic surveys have been conducted to provide base mapping of the existing WTP sites. The scope is based on a combination of aerial mapping and supplemental field confirmation using GPS and conventional methods. The survey files will show property corners along the forcemain alignment as needed to assist the City with property identification, however plats for easement acquisition or legal purposes, such as full boundary surveys, are not included in this scope. This scope includes subsurface investigations to confirm buried infrastructure for up to 9 test holes at the treatment plant sites and along the offsite pipeline for filtrate conveyance to the Eno River Pump Station, as required to complete the design. Survey effort will also be required to locate the

positions of the subsurface utility potholing described above. The scope of services assumes no survey plats are required to support easement acquisition and existing pipelines are assumed to be ductile iron relative to subsurface utility locations along the forcemain alignment.

205 Geotechnical Investigation

Conduct geotechnical investigations at the location of the proposed facilities to supplement existing geotechnical data and prepare a final geotechnical report for the Brown WTP and offsite pipeline. The collected data will be used for the design of the structure foundations and to estimate rock quantities in the bid documents. To the extent possible, ENGINEER will utilize existing data for the Williams WTP and Brown WTP. The ENGINEER will provide geotechnical drilling through a qualified sub-consultant.

TASK 300 PERMIT APPLICATIONS

301 Agency Meetings and Coordination

The Engineer will coordinate and meet with the regulatory agencies as necessary throughout the permit application and review process. Pre-submittal meetings are included, as needed, to define per it requirements and schedules. As part of this subtask, once the permit applications are submitted, the ENGINEER shall maintain contact with the regulatory agencies to monitor and, where possible, facilitate the review process.

302 Prepare and Submit Permit Applications

Applications for the required design-phase permits and approvals shall be prepared for submittal to the respective agencies along with the necessary copies of the contract documents. Where acceptable, the ENGINEER will make applications directly and provide all associated fees.

This scope assumes directional drilling or jack and bore will be used for any required stream crossings and therefore assumes that an Individual Section 404 permit, including archeological and endangered species surveys, is not required. A Nationwide Section 404 permit is included, if required. This scope of work assumes the following permits and approvals will be required:

- Sedimentation and Erosion Control Plan – Williams WTP
- Sedimentation and Erosion Control Plan – Brown WTP
- NCDENR Public Water Supply Section Authorization to Construct – Williams WTP
- NCDENR Public Water Supply Section Authorization to Construct – Brown WTP
- NCDENR Division of Water Resources Pump Station/Forcemain Permit – Brown WTP

- NCDENR Water System Management Plan Update
- City Site Plan Review
- City Stormwater Management Review
- City Historic Preservation Commission Review - Williams WTP
- Nationwide Section 404 permit, if required

TASK 400 BIDDING AND AWARD

Following receipt of authorization from OWNER, ENGINEER shall perform the following services related to Bidding and Award.

401 Advertisement

Assist OWNER in advertising for construction, materials, equipment, and services; and maintain a record of prospective bidders to whom Contract Documents have been issued, attend and conduct a pre-bid conference, and receive and process deposits for Contract Documents.

402 Addenda

Prepare and issue addenda as appropriate to interpret, clarify, or further define the Contract Documents. Addenda will be issued by ENGINEER.

403 Substitutions and “Or Equal” Requests

Consult with and advise OWNER to determine the acceptability of substitute materials and equipment proposed by Contractor(s) when substitution prior to the award of contracts is allowed by the Contract Documents.

404 Bidding

Attend and conduct a pre-bid meeting and the bid opening and prepare a certified bid tabulation sheet. Evaluate bids or proposals and assemble contracts for construction, materials, equipment, and services. Assist OWNER in contract award process.

The Bidding Phase will terminate and the services to be performed thereunder will be considered complete upon the issuance of a recommendation of bid award from the ENGINEER to the OWNER.

The OWNER reserves the right to amend this Agreement so that the ENGINEER may furnish services related to the project that are not currently part of the Basic Services. These additional services will be paid for by the OWNER in an amount and by a method to be determined at the time the services are requested.

2. OWNER’S RESPONSIBILITIES

A. Furnish to ENGINEER, as requested by ENGINEER for performance of Services as required by the Contract Documents, the following:

- Available data or drawings of physical conditions relating to the site.
- Access to the Brown WTP, Williams WTP, and force main alignment area.
- Timely review and input on deliverables.
- Other required information not covered herein.

OWNER shall be responsible for, and ENGINEER may rely upon, the accuracy and completeness of all reports, data and other information furnished pursuant to this paragraph. ENGINEER may use such reports, data and information in performing or furnishing services under this Scope of Work.

B. Examine all alternate solutions, studies, reports, sketches, Drawings, Specifications, proposals and other documents presented by ENGINEER (including obtaining advice of an attorney, insurance counselor and other consultants as OWNER deems appropriate with respect to such examination) and render decisions pertaining thereto.

C. Bear all costs incident to compliance with the requirements of the OWNER’s Responsibilities.

3. TIME PERIOD FOR PERFORMANCE

The time periods for the performance of Engineering Team services as set forth in this Agreement are amended and supplemented as follows:

<u>Project Component</u>	<u>Duration</u>
Final Design	11 months **
Bidding Services	3 months

** Assumes a 4-week City review period for all submittals

4. PAYMENTS TO THE Engineer

In Exhibit C of the Original Contract, delete section C4.01 A. 1. in its entirety and replace with the following:

1. A Lump Sum amount of \$2,655,700 based on the following assumed distribution of compensation:

	Task	Payment Amount	
a.	Original Contract Scope of work	\$496,100	
b.	100 Design Implementation and Meetings	\$96,500	
c.	200 Final Design WTP Improvements Sewer Lift Station and Pipeline	\$2,311,200 \$114,700	
d.	300 Permit Applications	\$76,500	
e.	400 Bidding and Award	\$56,800	
f.	Project Total	\$3,151,800	

5. SPECIAL PROVISIONS

OWNER has established the following special provisions and/or other considerations or requirements in respect to the Assignment:

Engineering services for construction administration, field inspection, start-up and training, and record drawings are not included herein and will be authorized via mutual agreement as an amendment to this agreement. During the development of the 90-percent review documents, the ENGINEER shall develop the construction phase scope of services for OWNER review and approval.